IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

    Timothy G. Offerle   Group Art Unit: 3683

Serial Number: 10/708,677   Examiner: Schwartz, Christopher P.

Filed: 03/18/2004

For: METHOD AND APPARATUS FOR PREDICTING THE POSITION OF
       A TRAILER RELATIVE TO A VEHICLE

Attorney Docket No: 81095828 (FGT 1910 PA)

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))

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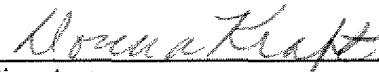
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Date: _8-1-2006_   Donna Kraft

RESPONSE TO EXAMINER'S ANSWER

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

    In response to the Supplemental Examiner's Answer mailed June 2, 2006, please enter the following reply.

REPLY

On page 6, et seq., of the Examiner's Answer, the Examiner disagrees with Appellants regarding the content of Col. 2, lines 42-63, and Col. 3, lines 1-45, of the *Deng* reference. As the Examiner correctly points out, at Col. 2, lines 50-51, *Deng* states, "The maximum hitch angle, θ°_{max}, is a function of the maximum wheel angles, the wheel base and track of the vehicle, the distance from the vehicle rear axle to the hitch, and the trailer tongue length." The Examiner goes on to state that in Col. 3, lines 7+, "The controller system now calculates the maximum allowed front *steering wheel angle* ... for achieving *the desired* hitch angle without counter steering of the front wheels." Appellants respectfully submit that these passages and the other portions of Col. 2 and Col. 3 pointed to by the Examiner highlight the differences between Claim 1 and the *Deng* reference. In the *Deng* reference the desired hitch angle is the hitch angle that is to be sought by the system. This in fact is not a predicted position of the trailer but the position sought. Claim 1 recites determining a predicted position of the trailer based upon the current position and the steering wheel angle and displays within the vehicle the current position and the predicted position of the trailer relative to the vehicle. No determination is made for the desired position. That is, the present invention predicts the position of the trailer based upon the steering wheel angle and the current position. Thus, the present invention provides a short term prediction and does not try to predict a desired hitch angle. This allows the driver to move the steering wheel and check the predicted position and change course if necessary. The *Deng* reference, on the other hand, determines the maximum allowed front steering angle for achieving a desired hitch angle without counter steering of the front wheels as set forth in Col. 3, lines 7+. The *Deng* reference tells the driver which direction to steer by maintaining the steering in the present direction or providing a counter steer message.

With respect to the *Gerum* reference, Appellants agree that jackknifing is discussed. However, Appellants do not agree with the Examiner's assessment that a predicted position of the trailer based upon a current position of the trailer and the steering wheel angle is set forth. The *Gerum* reference is similar to the *Deng* reference in that a target or desired amount is set forth. In the example set forth in Col. 6, lines 5-10, the output of the adaptive control algorithm is a matrix of the yaw vector parallel to the z-axis that is provided to logic 20. The logic modulates the brake cylinder pressure to produce the desired yaw torque about the z-axis. Thus, the *Gerum* reference tries to determine a desired yaw torque and does not predict the position of the trailer. It appears that only the desired yaw torque is used and the vehicle is

controlled with respect to the yaw torque. If the yaw torque is too great, jackknifing may be formed. Clearly, no predicted position of the trailer based on the current position and steering wheel angle is set forth. It should also be noted that in Col. 5, lines 55 through Col. 6, line 10, the steering wheel angle is also not set forth as in input to the adaptive control algorithm.

The *Mizusawa* reference is set forth for a display. However, the *Mizusawa* reference is used for aiding the driver for aligning the hitch with the coupler. However, a current position and a predicted position of the vehicle, where the predicted position is based upon the steering wheel angle and the current position of the vehicle is not set forth. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claims 1-4, 11-17, and 29-30.

Likewise, the *Deng, Gerum* and *Mizusawa* references are also used in the rejections of Claims 5-10 and 18 as well as the rejection of Claim 28. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to these claims as well.

Appellants now believe the case is in condition for allowance and, therefore, Appellants respectfully request the Board to pass the case to issue forthwith.

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Respectfully submitted,
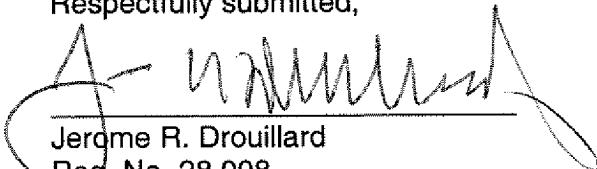
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